



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,817	10/19/2004	Andre F.L. Goossens	PC10423US	6522
23122	7590	09/11/2006	EXAMINER	
RATNERPRESTIA			ROST, ANDREW J	
P O BOX 980			ART UNIT	PAPER NUMBER
VALLEY FORGE, PA . 19482-0980			3751	

DATE MAILED: 09/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/511,817	Applicant(s) GOOSSENS ET AL.	
	Examiner Andrew J. Rost	Art Unit 3751	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 and 26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 26 is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to the Amendment filed on 6/21/2006. Claim 25 has been cancelled. Claims 11, 13, 14 and 24 have been amended. Claim 26 has been added. Presently, claims 11-24 and 25 are pending.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 11, 12 and 23-25 are rejected under 35 U.S.C. 102(e) as being anticipated by Rembold et al. (6,679,475).

Regarding claim 11, Rembold et al. disclose a solenoid valve containing a valve housing (40) with fluid channels (inlet 44 and outlet 46) in which a tappet (66, 82) is directed to a valve seat (50) with a valve closure member (ball valve 52), a magnet armature (70) is fitted to the tappet and is moved via magnetic forces from a magnetic coil (99) and is moved in a direction of a magnet core (core 74 and adjusting screw 90) with a spring (86) interacting between the core and the tappet that biases the tappet to a closed position.

In regards to claim 12, Rembold et al. disclose the tappet is held in a bore of the magnetic armature by frictional means (press fitting).

In regards to claims 23 and 24, Rembold et al. disclose a screw in the magnet core that is threaded and can be tightened to allow for the adjustment of the preload force of the spring. The screw having threads interacting with the threads in a stepped bore of the magnet core create a force holding the pieces together forming a single core piece for operation of the valve. A force is created and places a force (weight) on the spring to preload the spring.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rembold et al. in view of Losser et al. (4,712,767).

In regards to claims 13 and 14, Rembold et al. disclose a solenoid valve having a housing, tappet, magnetic armature, magnetic core and a spring. Rembold et al. do not disclose the use of many-sided profile tappet in contact with the bore of the magnetic armature. However, Losser et al. teach a tappet having triangular sides in a channel to allow fluid to flow around the tappet in a solenoid valve to be old in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was

made to add channels on the sides of the tappet of Rembold et al. to create a triangular profile as taught by Losser et al. in order to facilitate fluid flow around the tappet.

In regards to claims 15 and 16, the modified Rembold et al. reference discloses a step on the tappet that receives an end of the spring (valve tappet 66 has a spring holder 82 that has a head 84 that the spring contacts).

In regards to claims 17 and 18, the modified Rembold et al. reference discloses a guiding pin (88) that is received inside the spring.

In regards to claims 19 and 20, the modified Rembold et al. reference discloses a transition area on the tappet that is adjacent to the step (the transition area is the outer surface of the guiding pin of the tappet).

6. Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over the modified Rembold et al. reference as applied to claims 13-20 above, and further in view of Krawczyk et al. (6,994,406).

The modified Rembold et al. reference discloses a solenoid valve having a housing, a tappet with a guiding pin and transition area, a spring, a magnet armature, and a magnet core. The modified Rembold et al. reference does not disclose the transition area having an annular groove for receiving the spring. However, Krawczyk et al. teach the use of an annular groove on a guide pin that is inserted into a spring in a solenoid valve (Fig. 5 of Krawczyk et al.) to be old in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add

Art Unit: 3751

a groove as taught by Krawczyk et al. to the guiding pin of the modified Rembold et al. reference in order to secure the spring to the guiding pin.

Allowable Subject Matter

7. Claim 26^{is} allowed.

JM
9/1/06

Response to Arguments

8. Applicant's arguments filed 6/21/2006 have been fully considered but they are not persuasive.

Applicant's arguments on page 7, paragraph 5, regarding the Rembold et al. reference and the structure of the valve assembly having a spring supported with one end on the magnet core and the other end abutting a valve tappet are not persuasive. Examiner considered the magnet core to be the combination of the core (74) and the adjusting screw (90) (originally stated in Office Action sent on 3/21/2006, page 4, section 6, line 7). Therefore, the spring is supported with one end on the magnet core. Examiner further considered the valve tappet to contain both tappet 66 and spring holder 82, which holds and abuts an end of the spring (originally stated in Office Action sent on 3/21/2006, page 6, first full paragraph). Therefore, the spring abuts the valve tappet with an end opposite the end supported by the magnet core. Therefore, Applicant's arguments are not persuasive.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Persons (2,612,188) discloses a solenoid-operated valve having a core, a spring, a valve tappet, and a solenoid.


10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew J. Rost whose telephone number is 571-272-2711. The examiner can normally be reached on 7:00 - 4:30 M-Th and 7:00 - 12:00 Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Justine Yu can be reached on 571-272-4835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Andrew J Rost
Examiner
Art Unit 3751



JUSTINE R. YU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700
9/11/06